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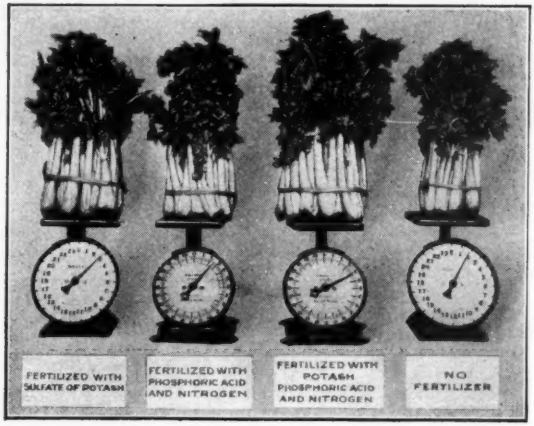
Early Days in County Agent Work by D. W. Frear—
Second Prize Question—Jeff McDermid—Ed Howe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Better Crops

The Pocket Book of Agriculture

VOLUME IV NUMBER FOUR

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Now for a feast—

Better Crops

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VOL. IV NEW YORK, JUNE, 1925 No. 4

And here we have a unique dissertation on

Fear

By Jeff McDermid

I HAVE just been chasing a *paranoiac* leghorn—a fowl of the genus *hen.*

Somehow or other she got out of the chicken yard and, that the dogs might not get her and liberate her cackly soul, thus upsetting my own plans for her demise a few months hence, I opened the gate and tried to shoo her back in.

She wouldn't "shoo". She tried her best to escape behind me, undoubtedly fancying she saw in my eye attempted murder. She couldn't understand that I was really trying to aid her by putting her beyond reach of the hounds.

Such a hubbub you never heard. All the hens and cocks in the yard, sympathizing with the apparently doomed bird, set up vociferous, raucous cackles, fear-trembly and shrill.

When I finally got her back, after a deal of effort, she sneaked for the bushes with lowered wings, undoubtedly praying her thankfulness to chicken Heaven for her miraculous deliverance.

A *paranoiac* leghorn!

PARANOIA is a nervous disease, which brings on the feeling that someone is about to get you.

Every doctor has had experience with at least one case of *paranoia*—in which the victim, covered with cold sweat seeks a secluded retreat, in fear and trembling, from an

enemy whose existence lies only in the fearful one's imagination.

This is *acute paranoia*.

But we are all victims of this disease to a greater or lesser degree. Only we laymen call it Fear.

Fear is sometimes the result of a sour stomach; often it comes from a generally weakened physical condition.

But usually it is simply the absence of mental power to overcome obstacles. It is the disease of the weakling among men—of the man, by Nature intended always to follow abler men, who suddenly finds himself in a position of power. Immediately fear sets him by the heels; fear that he will not make good; fear of what others will think of his decision; fear of loss of business, of money, of health, of friends, of prestige, or of his job.

"Only the unknown is terrible" said Victor Hugo, and the man who knows, and knows he knows, is the man without fear.

He realizes that if he lose one friend, he can get another; that the dollar lost can soon be replaced with one found; that if he loses one customer or client, there are a thousand more, all probably more appreciative, who are about to clamor at his door for admittance.

The sense of impending loss is not a stranger to him; but it does not stagger him. He does the best he can with what he has, with chin in air, breath deep, courage high—and accepts the world's favors and penalties with a grin.

But most men are in bondage to fear—you can hear their chains clink-clank as they talk. The hunted look in their eyes betrays them.

FEAR is a disease, and should be treated as such. It is a germ left in our feeble bodies from the days when we scrambled up the trees to avoid the curling, slithery python; when we huddled around the fire at night, looking often over our shoulders into the deep, surrounding darkness—into The Unknown full of terrifying we-knew-not-whats.

Fear is a disease of the mind, and not of the body. Children and imbeciles, with perfect bodies but unformed minds, do not fear. Children fear only that which has harmed them and which through nervous reaction upon the brain has left an impress on its convolutions.

Verestchagin, famous painter, remarked that "man, enveloped in the fog of ignorance, quakes and trembles at every phenomena of Nature. Wonder prompts him to ask—he wants to know."

And as soon as he knows, fear departs.

The savages, during an eclipse, flatten themselves on the ground in abject fear of the frightful "devouring of the sun by angry gods." But modern man, anticipating the phenomena to the minute, prepares to study it through powerful telescopes, all fear removed by his knowledge of what is behind the dimming of Sol's rays.

So fear is a disease of a mind that does not know.

Fear is a weed in Stupid's brain garden that should be yanked unceremoniously out and the space used for the flower of Knowledge.

Abolish fear and every man is a genius, a success, a friend to all. A man, like a horse or a hen, is useful only until he falls into the fateful clutch of impending doom.

Fear paralyzes the will, kills initiative, stops the flow of pleasing and vital gastric juices, stagnates thought and poisons the disposition.

Some folks are literally scared to death. Every time a man spends a week in fear that he will lose his job, he shortens his life a year. When he worries that the sheriff is about to waltz in and paste his little pasteboard on the door, he cuts his longevity down immeasurably.

Because worry is the child of fear.

And worry kills.

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Early Days *in the* County Agent Work

By D. W. Frear

Extension Associate Professor of Field Crops, University of Missouri

¶All the old timers know D. W. Frear who was formerly State Leader of County Agents in Colorado and, though he is too modest to say so, a real pioneer and leader in this work.

ALLYN H. TEDMON'S story "In The Old Days" in your January, 1925 issue of some of his early experiences and recollections as a county agent was exceedingly interesting and recalls to my mind some of the same instances that he mentioned as well as many others. His tribute to Bill Lauck is well deserved. Lauck was not only the first full time county agent in Colorado but one of the earliest, if not the first, in the entire west. In addition, he was among the outstandingly good agents of his entire period of service, which means that he would rank the same today.

Lauck had vision, was full of original ideas as well as always ready to accept worth while suggestions from others. He had a personality and a way with him that inspired the respect and con-

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County Agent W. H. Lauck enroute to Bald Mountain to organize a Boys' and Girls' Potato Club, February 19, 1915.

Damaged grapes at terminal market.

Cutting *the* Waste *in* Food Handling

By Frank George
U. S. Department of Agriculture

Preventing waste is a good way of increasing profits.

A RECENT study at New York showed that of some 4,563 carloads of perishable farm products inspected by Department of Agriculture officials, fully 3,676 carloads contained damaged produce. Losses on account of plant diseases, insect pests, mechanical injury, and temperature extremes run as high as 50 per cent of a carload in some instances.

The New York City Board of Health condemns annually some 8,000,000 pounds of fruits and vegetables as unfit for human consumption. Over 70 per cent of these condemnations are at railroad terminals and docks, but the figures do not begin to show the actual quantity of bad produce received, inasmuch as condemnation is made only when the damage is more than 25 per cent in a shipment.

It is possible to go on indefinitely piling up figures showing the tremendous waste of farm products after they have left shipping points. Freight loss and damage claims paid by American railroads have run as high as $14,000,000 a year on fruits and vegetables alone; butter, cheese and dairy products $800,000; eggs $1,000,000, and livestock $3.-

475,000. A conservative estimate places the loss of food at not less than five per cent of the volume reaching the consumer.

Much of this damage is preventable. The principal causes of loss and damage indicated by the records of railroads, express companies, and members of the trade are improper grading, delay in transit, rough handling, improper refrigeration and ventilation, freezing in transit, faulty packing, improper loading of cars, theft, shrinkage, insect pests and diseases, and condition of the market.

Fifteen years ago, receivers of citrus fruits in New York City considered themselves fortunate if a car contained as little as 10 per cent damage from decay. The loss since that time has been reduced to less than one per cent, due to standardization, rapid transit, better methods of refrigeration, and the policy of the shippers to regard "every doubtful orange a cull."

Public and private marketing experts consider that similar results can be achieved with all perishable products. Fruits and vegetables are sometimes shipped when too ripe, so that they reach the market in such a deteriorated condition that their value is reduced below handling costs. It is not uncommon to find much food reaching consuming markets that is not of sufficient value, because of poor quality, to pay transportation charges even in a period of high prices.

STANDARDIZATION and shipping point inspection are held out as two effective methods of correcting this situation. Grading based on accepted standards is necessarily first, topped by official inspection before the products are loaded for shipment so that only the quality of product that can withstand shipment to market will get into the channels of trade. It has been demonstrated time and again that a smaller quantity of high grade produce will often bring more money than a much larger quantity of inferior quality.

A cause of loss closely associated

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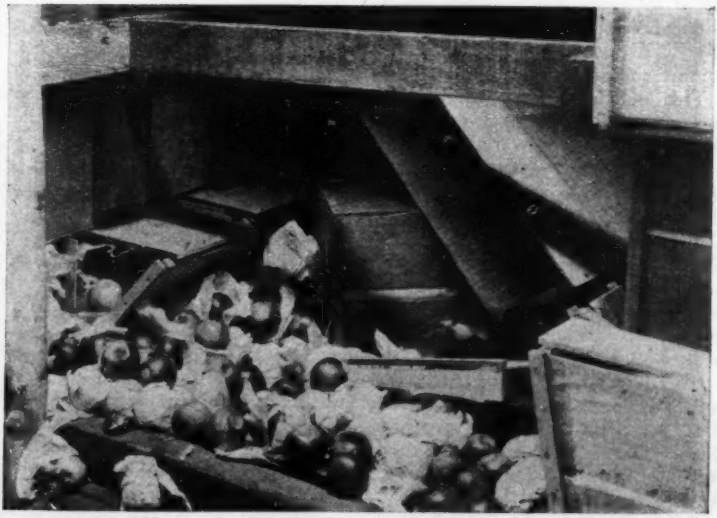

These boxes of apples were improperly loaded with the result that the bottom layers were destroyed.

Growing DEWBERRIES in the Carolinas

By R. F. *Fairbanks*

¶There is money in this crop if it is handled right. Mr. Fairbanks sums up the best practical advice obtainable on raising it successfully.

THE largest dewberry growing section in the U. S. is in the sand hills of North and South Carolina and Georgia. The industry started on a commercial scale in the Southern Pine section of North Carolina about 20 years ago, and has gradually developed and spread until now it is one of very considerable commercial importance.

This delicious berry thrives on the sandy soils of these three states. While they will grow on almost any kind of soil, they seem to do best on the deep sandy soil that prevails in the section of Southern Pines, Cameron, Hoffman, Hamlet, N. C., Cheraw, McBee and Camden, S. C., and McRae, Ga.

The Lucretia variety is the one grown, as it is unquestionably the best one for that section.

The dewberry grows well on poor soil, but liberal amounts of plant food must be supplied. It grows deeply in the ground and is therefore not as likely to suffer from drought as blackberries and raspberries. Because of this deep rooted habit, it is naturally more subject to injury from wet soils than blackberries and raspberries. The ideal soil is a coarse sandy loam that has a clay subsoil, as such a soil is usually well drained and yet there is enough moisture down deep in the ground properly to supply the plants.

THE dewberry, once established, will last over a long period of time. We know some fields that are already 15 to 20 years old. It is generally believed by the most successful growers, however, that it matters not how well the plants may have been cared for, it is desirable to reset a new field at the end of 15 to 18 years.

On account of the plants occupying the land over such a long period of time, it is highly desirable that the ground be very thoroughly prepared before setting. It is customary among the best growers to break the ground broadcast deep in the fall of the year, leaving it loose and exposed to the freezes and rains of winter. Then in late winter or

early spring, the ground is cross harrowed with disc and other harrows going over the field a number of times.

Where the soil is reasonably poor, it is customary among the best growers to grow and turn under a cover crop of cowpeas, soybeans, or some other legume crop, the year before the berries are to be set. It is desirable to devote the ground to some cultivated crop for two or three years before being set to dewberries, and for these crops to be well fertilized, in order that the soil may be reasonably free of weeds and grass seed and in A No. 1 condition.

THE plants are usually set in late winter or early spring. The rows are laid off five feet apart each way in checks. Then the plants are set in these checks. In this way the expense of cultivation is reduced, because it enables the grower to cultivate both ways.

Care is necessary in setting the plants. The roots must be spread out as nearly as possible in their natural position. The plants are usually set about three inches deep and the old stem is cut back to a height of about six inches. The plants are allowed to remain in this shape until spring, when cultivation is started. Cultivation is kept up until the vines have run sufficiently to make cultivation impracticable. It is not desirable to turn the vines, unless the grass and weeds should become very troublesome. Usually the horse cultivation is kept up until late June or early July on the newly set berries.

THE dewberry produces fruit on the second year wood. Therefore no crop is secured the first year after setting, but in order to get a maximum yield the second year after setting, every effort is made to secure strong, vigorous wood growth. An application of 800 to 1,000 pounds per acre of fertilizer is usually given by the leading growers. One analyzing 8–4–6, or eight per cent phosphoric acid, four per cent ammonia, and six per cent potash has been found to be the best for dewberries in the sand hill section. The potash is highly essential in order to give the berries carrying qualities. This application of fertilizer is given just as the

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An ideal dewberry farm of 30 acres located at Hamlet, North Carolina.

The Burning Question

By C. A. Dawson

(Mr. Dawson is a teacher of Agriculture in South Africa and one of our long distance readers. What he has to say here, however, applies to the United States as well as Africa.

"TO burn, or not to burn, that is the question," as Hamlet might have put it if he had been a twentieth century farmer. The question is answered in the affirmative every year in Russia, where sunflower stalks are burned to produce thousands of tons of ash. To a lesser extent the same practice is followed in South Africa. Bringing the subject a little nearer home, the burning of refuse matter on American farms has not entirely disappeared. The practice is sometimes justified, but there is generally a better way out, and it will be worth while to consider the alternatives before we set a match to the pile. The writer's apology for taking your valuable time and space—for this space is yours when the Editor has done his best with it—is that he has been up against the problem pretty frequently, and has had to answer the question which has been stated above.

Watching a pile of stalks or straw going up in smoke, one might ask, "Why do we grow crops?" We grow them for food for man and beast, to produce raw products for manufacture, to add nitrogen and humus to the soil, to provide bedding for animals, and to provide smokes for mankind (and to some extent womankind.) If you include timber crops, wood for every purpose may be added to the list. Then there are by-products—straw used for thatching—sugar cane bagasse pressed into sheets for wall and ceiling boards, and boxes—and others too numerous to mention. There are plenty of ways of utilizing crops and crop residues, and there doesn't seem to be any need of burning anything for want of a better way of disposing of it. If burning is necessary in order to control serious crop pests, then it is justified. Even in this case it will be shown that there are alternatives that can be frequently employed.

WHAT happens when a pile of straw or corn stalks or sunflower stalks is burned? For every pound of potash that is obtained, half a pound of nitrogen and a hundred pounds of dry humus-forming material, more or less, are thrown away. Most of us are familiar with the wonderful growth of crop plants that takes place in patches in a field where there have been bonfires. I remember the big grapebrush bonfires that we used to have at home, and how the patches showed up when the next crop was grown. Part of the effect is due to the potash. We can obtain this more economically by buying potash to apply to the soil than by sacrificing nitrogen and organic matter by burning in order to obtain in readily

available form the small amount of potash that plant refuse contains. Part of the effect is due to sterilization of the soil, and probably some other factors about which we have relatively little knowledge at the present time. That they are beneficial, there is no doubt. That we can afford to pay the price in nitrogen and organic matter may be very seriously questioned. Excepting for very special purposes in some forms of very intensive agriculture, the answer is obviously in the negative. As an example of a possible exception to the principle stated, we have the method of sterilizing tobacco seed beds by burning piles of brush and straw over them. Steam or chemicals may be used, but sometimes burning is the most convenient and cheapest.

The effects noticed when crops are grown where refuse has been burned often mislead people. They see the dollar in the crop and overlook the fiver that has gone up in the smoke. An expert came to me one day. I have a license to talk, because I used to be an expert too, until I heard what Henry Ford said about experts—then I decided not to be an expert any longer. This man gravely informed me that growing sunflowers would *improve the soil.* I happened to have some pretty good evidence to the contrary, and it was technically and in all common sense correct and reliable. But I wanted to hear what he had to say. It was the same old story. He burned the stalks, and the ash had a wonderful effect on the next crop. I protested, but it wasn't any use. "No," he said, "You haven't been here very long, but you can take it from me, sunflowers improve the soil." I gave it up—he was sold on the idea and you couldn't sell him another one. He will go on thinking he's right until he has to start buying nitrogen and spending more money putting organic matter back into the soil. Then he'll wake up — perhaps. Burning stalks and straw seems alright until we get to the point where we must replace what has been destroyed. Then it seems all wrong.

THE primary use of crops is to feed man and animals, directly, or through the medium of animals, to clothe man. An important secondary use of crops is to furnish raw materials for manufacture of commodities other than those used for food and clothing — linseed oil, alcohol and other drugs, and so on. Crop residues which are not suitable for any of the above purposes can be used for bedding, or can be ploughed in to improve the soil or can be burned to provide potash. This is the order of values—a crop is worth more for feed than it is for manure, and it is worth more for manure than it is for producing ash.

Considerations of the cost of handling and transporting the materials are mainly responsible for the fact that crop residues are often used at a lower place on the scale than their face value seems to warrant. Hence we have the header-thresher, the corn-picker followed by the stalk-cutter, and similar devices for feeding the soil what we cannot, under certain conditions, feed to stock, or utilize to better advantage in some other way. Nevertheless, when we have the facilities for using them, crops and crop-residues are worth more for feed or for bedding than they are for direct application to the soil, and they should only be used in the latter way when a better way cannot be found.

There are cases, however, when it is difficult to effectively dispose of stalks by ploughing them in. There may be a lack of capital to purchase a stalk-cutter, or an insufficient acreage to justify one, or a stony soil on which the blades are almost continually dull and ineffective. The statement that the

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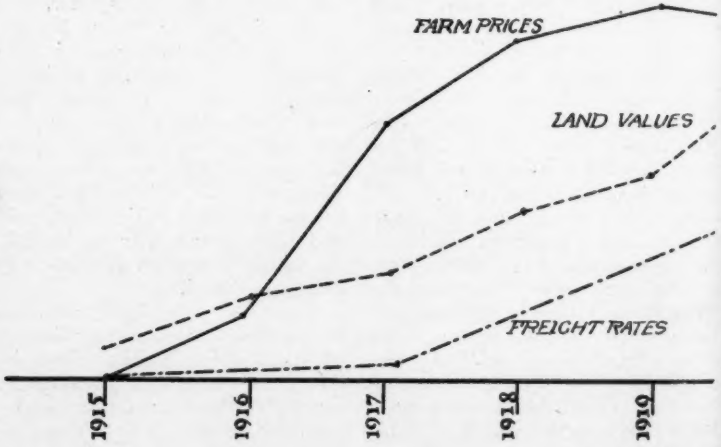
A *New* Demand *for* Lower Freight Rates

By A. M. *Loomis*

The subject of freight rates is one of the most complex problems of the day. The Grange, after making a careful study of the matter, has presented a very sane and sensible brief to the Interstate Commerce Commission. BETTER CROPS *invited Mr. Loomis, who assisted in the preparation of the brief, to sum it up for our readers. He accepted the invitation and you will find his article a sound presentation of this vital subject.*

RAILROAD rate experts and traffic organizations were rudely shocked by the announcement broadcast from Washington on May 15, the day for final filing of briefs in the Hoch-Smith investigation now being conducted by the Interstate Commerce Commission, that The National Grange had entered the traffic rate field, and had presented a brief for a blanket revision of rates on agricultural products. During a five year discussion pro and con on this subject The Grange had contented itself with a formal and dignified statement of its views that freight rates on farm products were too high, and had seemed to believe that the mere formal expression of this belief would bring about some relief.

Following this up with more vigor, however, during the session of Congress which closed in March

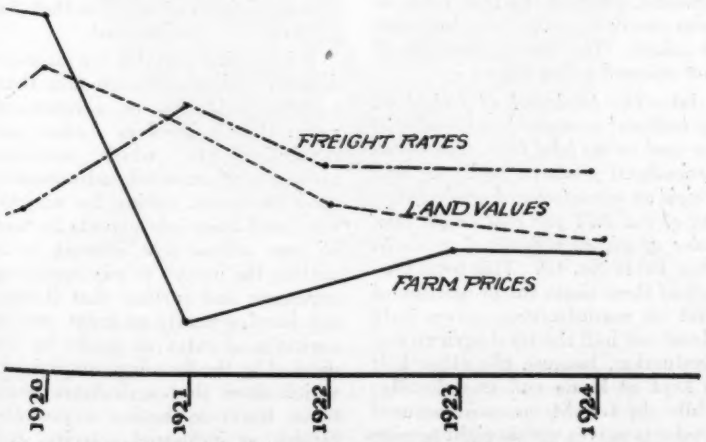


This chart shows relative levels of agricultural prices, land values and railroad rates from 1915 to 1924. The base line is 1910-14 average. Freight rates are based on changes in freight rates of 50 representative agricultural commodities.

The Grange had endorsed the Hoch-Smith resolution, and had added the weight of its approval to the general demand for its passage. As a result Congress had passed this resolution, and now the Interstate Commerce Commission has started work as thereby directed.

Readers of BETTER CROPS need no introduction to The National Grange, nor to its representative in Washington, Dr. T. C. Atkeson. Dr. Atkeson has represented this great national organization of farmers as its Washington spokesman ever since the World War. Prior to that in addition to his duties as Dean of the State College of Agriculture in West Virginia, he had been active for many years as a member of the legislative committee of The Grange, and was recognized as one of the leading men in this organization as well as one of the soundest thinkers and safest counsellors in its official personnel. During six years work in Washington he has made a record of advocacy for safe, progressive, and resultful agricultural legislation and has established a reputation for ability and statemanship not excelled by any other representative of any organization no matter what its field. It is this record and reputation of Dr. Atkeson, perhaps as much as the tenor and arguments of the brief which he has presented, which have resulted in centering the attention of the traffic world just at this time in the Grange demand for a readjustment of freight rates on all farm products.

THE brief itself, however, outlines a position, and quotes facts, arguments and authorities, which entitle it to serious consideration. It opens up the whole economic relationship of railroad transportation to agricultural and industrial tion to agricultural and industrial development. It charges that traffic men made rates back in ancient history days, without knowing or caring much about economic results, that vast and fundamental changes have since taken place in both agricultural and economic conditions which ought to be taken into consideration and have not been so considered. It comments on the disparity between the economic



Note the partial correction of the apparent inequality of levels effective January 1, 1922. A similar chart showing levels of freight rates on most manufactured commodities would show many manufactured commodities still above the line of freight rates, and a weighted average of all, 10 per cent or more above the level of agricultural commodities.

status of industry and agriculture, points out that horizontal changes made when the original distribution of costs is out of line still leave resulting rates out of line, and winds up with a statement of economic principles which operate to the disadvantage of agriculture more seriously than to other industries whenever freight rates are out of proper balance.

The material used in the preparation of the brief is taken from reports of the Interstate Commerce Commission itself, and from the records, investigations and report of the Joint Commission of Agricultural Inquiry, of which Hon. Sidney Anderson was chairman. These reports and recommendations are imposed upon two fundamental statements of fact, which have not been disputed, and which it is believed cannot be disputed, and put up to the Interstate Commerce Commission so strong a support of the direct mandate of Congress as expressed by the Hoch-Smith resolution, that it is not likely that the Commission can escape the necessity of at least making the full inquiry which is demanded as to the economic effect of the high rates on farm products, and a readjustment as asked. The two statements of fact referred to are these:—

1st—*The total cost of freight on agricultural products is a tax of 6.23 per cent on the total farm value of all agricultural products, while the total freight on manufactured products is a tax of but 2.11 per cent on the total value of all manufactured products.* (See Table No. 1.) This total burden of three times the proportion of that on manufactures moves only about one half the total agricultural production, because the other half is kept at home and used locally; while the freight on manufactured products moves within eight or nine per cent of the total volume.

2nd—*The average freight rate on agricultural products is $3.49 per ton on primary products, and $4.97 per ton on animals and products; while the freight rate on all manufactured products is but $2.54 per ton.* (See Table No. 2.)

SINCE this brief was filed and its text made public Dr. Atkeson has received evidence of great interest and approval from widely scattered interests and localities. Incidentally he has also received some expressions of dissent and opposition. This is to be expected. However the chief basis for most of the opposition and dissent has come from what appears to be a misunderstanding, perhaps from a failure to properly analyze the whole content and intent of the revision of rates which The Grange asks for. The brief does not only ask for a revision downward on agricultural products in general, but it predicates this request upon the assumption and stipulation that the existing volume of freight receipts must be maintained at a level sufficient to properly pay the cost of operation and of financing the railroads, and may not be arbitrarily reduced, but must, if agricultural rates are decreased, be readjusted so that the totals may be maintained.

It is implied that this is a far more difficult and complicated task than a mere reduction of agricultural rates, that it involves studies and conclusions in which intricate problems of economic adjustments must be made, calling for agricultural and economic experts instead of men whose sole interest is in getting the money to pay operating expenses; and further that it may not involve nearly as great cuts in agricultural rates as might be indicated by the forgoing comparisons which show that agriculture bears three times as heavy a pro-rata burden as industrial activity, but that by properly lowering some agricultural rates, and carefully raising other rates, a well balanced

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Better Crops' ART GALLERY *of the month*

Dr. William A. Orton, the new director and executive head of the Tropical Plant Research Foundation, an organization of eminent scientists who are going into the Tropics to study plant diseases. Dr. Orton was for years one of the leading authorities of the U. S. D. A. on plant diseases. His work on cotton wilt and potato diseases has been of great value.

This photograph and the one below were taken by county agent H. S. Agster of Jasper County, Indiana on the experiment field which has been maintained for several years by Purdue University. Corn was planted on mucksoil. The check plot, pictured above, yielded absolutely nothing as can be seen from the bare ground.

This plot received 500 lbs. of potash per acre (250 pounds in 1919 and 250 pounds in 1921.) It has averaged 44.7 bushels during the past five years. A good proof of the effect of potash in reclaiming muck soils.

A New Tobacco Disease

¶A concise explanation of sand drown and the best remedies.

A NEW tobacco disease that has recently played havoc with many a field on the light soils of the eastern and southern tobacco districts, has been named "sand drown" since it occurs most often on sandy soils in wet seasons.

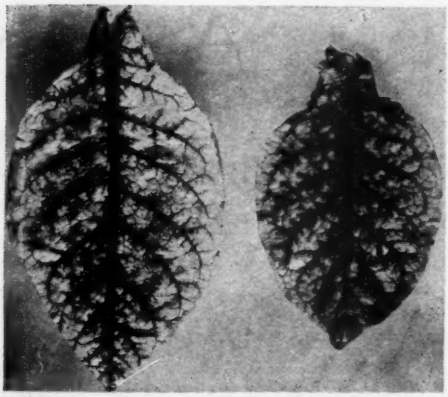
This disease puzzled both growers and scientist for several years until Dr. W. W. Garner and his associates in the Bureau of Plant Industry of the United States Department of Agriculture discovered and proved that it is due entirely to a lack of magnesia in the soil. The disease is more severe in wet seasons on account of the more thorough leaching of the magnesia from the soil.

According to Dr. Garner, sand drown usually occurs in the field after the plants "have attained considerable size, more commonly after topping, so that the leaves usually attain the normal size and shape." The leaf gradually bleaches out and finally becomes almost white except that the veins usually remain green. The bleaching begins at the tip and around the margin and moves toward the base and central part of the leaf. The white portion of the leaf does not die and fall away as in the case of lack of potash. The cured leaves appear dull and faded—hence the disease may greatly lower the market price of the crop. The weight of the leaf is also greatly reduced.

Sand drown, its cause and method of prevention were all discovered at the Tobacco Station of the North Carolina Department of Agriculture at Oxford in cooperative investigations with the United States Department of Agriculture. The story of these important discoveries is very interesting but too long to be given here in full. Several experiments, conducted during the past 12 years, however, have shown conclusively that the application of material containing magnesia aids in controlling sand drown. The cheapest and easiest way to supply magnesia is to use a fertilizer that contains this ingredient in addition to the ammonia, phosphoric acid and potash that are present in all complete fertilizers. Fortunately one form of potash, called sulfate of potash magnesia, is on the market and should be used in all fertilizers for tobacco on sandy or sandy loam soils.

Other potash salts, such as kainit and "manure" salt, contain magnesia and for this reason will control sand drown, but they also contain a lot of chlorine which injures the burning qualities of the tobacco. Muriate of potash usually contains considerable magnesia and to a certain extent helps in controlling this disease, but it contains a high percentage of chlorine and should not be used on tobacco that is intended for smoking purposes.

Experiments have also shown that the application of lime or limestone containing a high percentage of magnesia will control sand drown,



Leaves of Connecticut Valley Cigar Wrapper Tobacco showing advanced stages of sand drown which is due to a serious lack of magnesia in the soil.

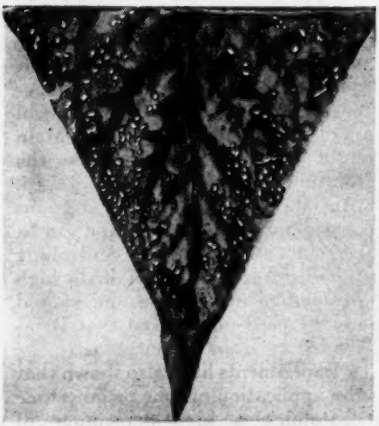
Photograph used by courtesy of the United States Department of Agriculture

but this form of lime is not available everywhere and, of course, liming is not always necessary.

Cottonseed meal also contains a small amount of magnesia—a fact which probably accounts for a part of its popularity as a source of ammonia for tobacco fertilizers. It, therefore, helps to control sand drown, but should not be depended upon entirely.

On the heavier soils of Pennsylvania, New York, Ohio, Kentucky, Tennessee, West Virginia, Indiana and Wisconsin, the disease has not yet made its appearance and there is little if any need for magnesia in the tobacco fertilizer in these districts.

On the light sandy soils of the Connecticut Valley, the Maryland export district, in the New Belt of North and South Carolina and in Georgia and Florida sand drown occurs frequently and growers in these districts should make sure that their fertilizers contain plenty of magnesia, and, for the sake of smoking quality, little or no chlorine. This means that the potash in the fertilizer should be derived from the potash salt called sulfate of potash-magnesia, formerly known as "double manure salt."



Tip of tobacco leaf showing effect of lack of Potash.

Photograph used by courtesy of the United States Department of Agriculture

A Great Commoner

By E. W. Howe

A NAME for which I have profound respect is that of Henry Wallace, the elder, one of the Great Commoners who have distinguished this good country.

He was farm-born and farm-trained, and, late in life, wrote one of the best books on the rural life of New England I have ever read. His tribute to the excellent people found on farms, and the comfort they may find in life, in spite of hard work, will in time become a classic, I hope.

In spite of poverty, he found opportunity for schooling, and became a preacher. I never knew the man personally; I have only heard of him, as I hear of so many others. And it always seemed to me he was a good preacher. Some preachers drive men away from religion. I am sure Henry Wallace never did, he was himself so decent, so intelligent, so useful.

Joining the mighty procession that marched to the West, he settled in Iowa, and became a farmer; a good one. In time he became a country editor, farmer and exhorter; always an example and inspiration to those who knew him. He preached good farming as well as good living; those familiar with his example saw that it was so worthy that they longed to follow it.

His final work was as editor and owner of one of the earliest of our notable agricultural publications. In this he preached good farming, industry, politeness, thrift, good citizenship, courage, so persistently that he became a national figure. He was gentle, intelligent; a man of education who taught in a modest, acceptable and effective way.

There was tuberculosis in his family. He attacked the taint, and overcame it by proper living. And when he died at seventy-eight, the printed tributes to his memory filled a great book.

It has always pleased me that this man was so widely appreciated, in spite of his modesty. He refused many positions of distinction, preferring to remain one of the people, share their burdens, and assist, so far as he could, in solving their problems.

I know of no name I respect more than that of Henry Wallace. He could turn a furrow, talk intelligently in public, or write helpfully for print.

And he always preferred to remain in the ranks, and assist in helping his fellow soldiers to more comfort and effectiveness. No Great General did more for his fellow men than did this Great Commoner.

Use of Stilts *in* Tree Wiring

By *Lloyd Austin*
University of California

¶A new time-saving method of wiring fruit trees to prevent breakage.

DO you know that the use of wooden props to support the limbs of fruit trees is now antiquated on the Pacific Coast? Up-to-date growers are rapidly adopting the new wire bracing system to hold up the limbs of their fruit trees. Of course the use of wires is, in itself, nothing new. Farmers occasionally wire up weak limbs that are heavily laden with fruit. Until recently, however, whole orchards have never been wired in a systematic manner. Heretofore the wires were usually wrapped around the limbs which they were to support, and as a natural consequence these limbs were generally girdled completely, unless the wires were removed at the end of each season. It will be of interest, then, to see, just how modern wiring is done in commercial orchards of the Pacific Coast.

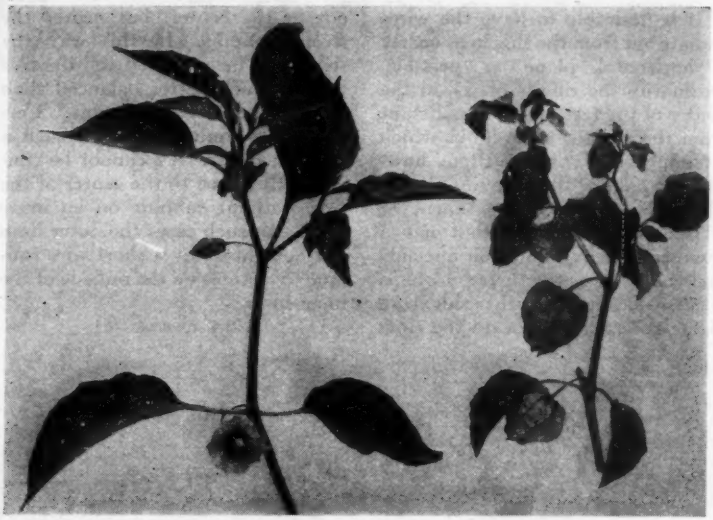
Briefly, the method consists in first fastening wires to the various limbs of the tree which need support, and then these wires are all brought to a harness ring or washer near the center of the tree. Ordinarily the ring should be suspended in the open space, several feet above the place where the main limbs arise from the trunk. The uninitiated will wonder how the wires are permanently fastened to the limbs without causing injury to them. The method is simple. The wire is fastened to a staple or screw eye of suitable size. Screw eyes number 209 are commonly used on the larger limbs, while chicken wire staples are useful for the smaller branches requiring support. If care is taken to leave the staple or screw eye parallel to the limb, it will soon be grown over and no injury to the tree will result. This method of fastening the wires to the limbs is much preferable to that of passing the wire around the limbs and using wooden blocks or pieces of hose to prevent it from cutting in.

ONE of the principal advantages of this method of wiring is that it is possible to balance up a tree much better than could ever be done by the old method of wiring from limb to limb. The central ring distributes the strain of a particularly heavy limb over most of the other limbs of the tree. The use of the ring also makes it possible to hold up many limbs which are in such a position that they could not be held up by running a wire to another limb.

It is desirable to have the wires radiate out from the ring in as nearly a horizontal plane as possible. Ordinarily the ring is placed in the center of the tree, about equidistant from the various main limbs which it supports. It is a mistake, however, to assume that the ring should always be in the center. Whenever a tree is encountered that has a number of heavy limbs on one side and only two or three, perhaps weaker ones, on the other side, care should be taken to locate the ring, not in the center, but nearer the stronger limbs. In this way the strain will be equalized and the tree will be much better balanced than would otherwise be possible. Certain outer limbs will be in such a position that a wire cannot be conveniently taken to the center of the tree, without rubbing on an inner limb. In such cases the outer limb can be held up by a short wire running to a staple on the outside of the inner limb.

(*turn to page 36*)

The use of stilts instead of ladders in wiring trees to prevent the breakage of limbs. The arrow points to the ring suspended in the center of the tree. Wires go from this ring to the limbs where the two men are working, and also to the other main limb.



Ground cherry; harborer of tomato and tobacco mosaic.

Controlling Diseases *by* Destroying Weeds

By *Albert A. Hansen*

¶An investigation into the causes of plant disease and the remedies.

SOMETIME ago I was a member of a curious crowd that watched a large freighter from tropical waters dock at a pier in New Orleans. Each rope that connected the ship with the shore bore a strange-looking plate-shaped disc and upon inquiry I learned that the object of the discs was to prevent rats from going ashore. Rats, I learned, may carry bubonic plague which in turn may be transferred to the human through the agency of fleas.

Figuratively speaking, there are rats, plague and insect carriers in many of our fields. The rats in this case are the four common weeds: bull nettle, ground cherry, pokeweed and milkweed; the plague is a virus disease called mosaic and the patients inoculated with the deadly virus are tomatoes, tobacco, cantaloupe and cucumbers. But

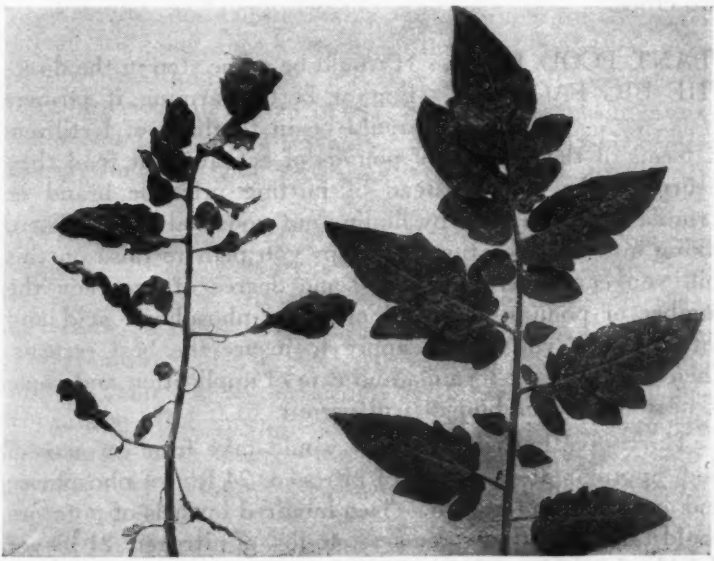
there are no discs to prevent their entrance; instead the weed disease carriers must be exterminated in order to destroy the source of contamination.

One of the commonest and most destructive diseases of tomatoes is mosaic, evidenced in the field by crinkled and mottled leaves and seriously decreased yields. Since it was known that the virus responsible for the trouble was carried neither on the seed nor in the soil, the source of the disease has for years been a mystery. Recently, however, due to some excellent detective work in which Dr. Max Gardner and James B. Kendrick of the Purdue University Agricultural Experiment Station were the principal sleuths, the baffling puzzle has been unravelled, much to the profit of tomato growers.

Like most other mysteries, it is all perfectly simple when explained. After running down a number of clues, the scientific detectives discovered that the dangerous mosaic virus is harbored in several weeds, principally ground cherry and bull nettle, from which it is carried by plant lice and other insects and inoculated into the tomato plants. The mystery may properly be called a deep mystery, because it was learned that the disease-producing virus is carried over winter in the deep-seated creeping and perennial roots of the weeds and made accessible to the insect carriers as soon as the sprouts appear in the spring. Furthermore, it has been demonstrated under actual field conditions that if all ground cherries and bull nettles are destroyed in and near the plant beds, mosaic in the field can be effectively controlled. One farm on which this was satisfactorily demonstrated belongs to Ralph Kemp of Tipton County, Indiana, one of the largest growers of tomatoes in the leading tomato state in the union and a former president of the Indiana Canners' Association.

This interesting discovery opened up many new clues that were run

(*turn to page 28*)



The wrinkled, mottled tomato leaves to the left are typical of mosaic. The branch to the right is healthy.

The Editor's

DIFFERENT CROPS NEED DIFFERENT FERTILIZERS

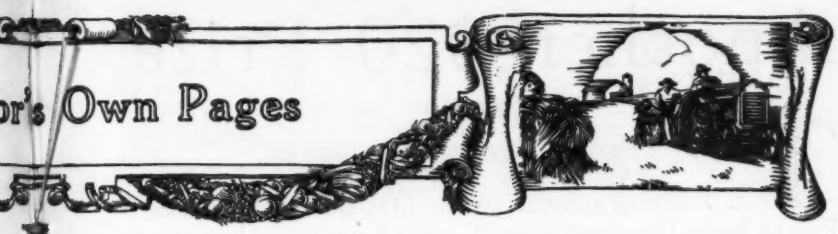
When I was a boy I lived next door to a very thrifty old couple. The woman died and, having left unconsumed several bottles of medicine for feminine ailments, her husband consumed them. When my father remonstrated with him he said, "Well, it's good medicine and 'twould be a shame to waste. Maybe it'll do me some good somewhere."

I think that many farmers buy their fertilizers on some such theory as this. "Give me some of that $30.00 fertilizer," I've heard a farmer tell his dealer. What was in it or whether it suited his needs didn't seem to concern him. So I have known farmers to apply a good wheat fertilizer to potatoes with no apparent realization of the different needs of these two crops.

PLANT FOOD IS THE BIG FACTOR

It would be a fine step in the direction of better farming if farmers would begin to think of fertilizers in terms of the number of pounds of actual plant food they return to the soil. Instead of putting price or brand or formula first, you start by finding out your soil type. Then, taking into consideration the crops you plan to raise on this soil, you can determine with some degree of accuracy the number of pounds of actual nitrogen, phosphoric acid and potash which you should apply to insure the best returns. Then work out the formula and rate of application and come as near it as your budget will permit.

Thirty-five bushels of wheat would take from an acre of land, approximately 59 lbs. of nitrogen, 24 lbs. of phosphoric acid and 31 lbs. of potash. Two hundred bushels of potatoes would take from that same acre, 46 lbs. of nitrogen, 21 lbs. of phosphoric acid, and 74 lbs. of potash. A well balanced fertilizer for wheat would be way out of line for potatoes.



A thousand pounds of a 4–8–6 mixture or five hundred pounds of an 8–16–12 mixture contain the same amount of plant food:—40 lbs. of nitrogen, 80 lbs. of phosphoric acid and 60 lbs. of potash and the latter formula, if bought in quantities, is likely to be cheaper because of the saving in freight and handling.

Begin to think of fertilizer in terms of the actual amount of plant food it contains and you will begin to farm more efficiently and consequently more profitably.

MORE ECONOMY! Now that our Federal government is seriously putting through a program of economy and tax reduction, our state administrations would do well to follow this example.

Wasteful and unjustifiable expenditures of taxpayers' money are going ahead merrily in many of our states. You have a voice and a vote, Mr. Tax Payer. If you let your state government issue bonds for unnecessary highways, bonuses and the like, without voicing and voting your protest, you are failing in your duty as a citizen.

WASHINGTON IN MAY The wonderful trees and gardens—the tourists — the good hotels — the poor restaurants—the conventions—the amazing number of autos—the pleasant welcome at the Department of Agriculture—the perfect strawberry shortcake at the cafeteria near the Department—the Frear Gallery, an ideal art gallery—the incomprehensible trolley car system—the sight-seeing auto busses—the florist shops everywhere—the splendid plan of the city, a capital worthy of our country.

Jeff McDermid

Another $20 Prize!

THE winning answer to the first question, "Does It Pay to Raise Quality Crops?", which we asked last month will be published in our July issue. If you didn't send in a contribution, try your hand at the interesting question proposed for this month:

"Should Farmers Organize to Improve Their Economic Condition?"

This is the second of five questions which will be asked monthly in our pages. The best answer will receive a prize of $20.00. There are no restrictions except on length. Answer it any way you like. We want a clear and convincing presentation of why you believe as you do on this subject. Just make your argument brief and to the point.

Answers to this question must not exceed 800 words. They must be mailed before midnight July 6th. The winning answer will be published in our August issue. The judges will be Jeff McDermid and Basil H. Pillard, editors of BETTER CROPS. In the event of a tie, the full amount of the prize will be awarded to both contestants. The judges reserve the right to withhold the award in the event that none of the answers is deemed worthy of publication in BETTER CROPS. BETTER CROPS reserves the right to publish any manuscript submitted in this contest at the regular rate of one cent a word. No manuscripts will be returned.

Send your answer before July 6th to:

JEFF McDERMID
Better Crops Publishing Corp.
461 EIGHTH AVENUE NEW YORK CITY

A Stenographer Well Worth Her Cost!

Dear Jeff:—

The articles in your May Issue of BETTER CROPS relating to stenographic help for County Agents have caused me to give the matter some serious thought. Possibly the experience I have had in running a County Agent's office without any help and with help add somewhat to the ideas that have already been expressed, and will possibly be of some assistance to County Agents who are at the present time debating the question.

My experience teaches me that no County Agent's office should be without stenographic help, if it is at all possible for him to secure it. My first year as County Agent was spent without any office help whatever, and I found that whenever it became necessary for me to do field work my office had to be locked. This according to the figures in my annual report, was two-thirds of the time. This meant that farmers coming in from the country wanting to receive information from the County Agent's office were disappointed two-thirds of the time.

The following year I was successful in securing office help full time, and as a result my annual report showed just twice as many office calls as the previous year. This was not due, except in probably a small sense, to the additional interest I had aroused in the work, as there had been agents in the county four years previous to my going there.

In order to prove to myself and to our directors that it was an investment and that the County Agent's office could be operated more efficiently with office help than without, I kept a record one day of the office calls and found that fifteen farmers called on this particular day and that twelve of them received the information they were seeking without seeing the County Agent. The other three made arrangements with the office girl for dates when they could consult me concerning their problems. This day, instead of fifteen farmers going away from the office dissatisfied and kicking against Extension work, they went away boosters, satisfied that the taxes spent in this work were entirely worth while. Many of them had driven twenty or twenty-five miles and one could not have blamed them for being dissatisfied had they found the County Agent's door locked.

In addition to the above advantages, there is the great advantage of having someone who is able to take care of correspondence at a time when it should be taken care of. I well remember that when I was struggling along alone that sometimes very important correspondence was left unanswered owing to the fact that the time was not available to answer it. When a farmer writes in to the County Agent's office for bulletins or information, it will always be a boost for the work and he will be better satisfied if the next mail brings him the desired information, or a letter stating that such information is being secured for him. It demonstrates to the farmers that the person in the County Agent's office is alive and that he is on the job.

Then too, the County Agent's office should be, in my estimation, a storehouse of information, but this information will be of no value if it cannot be located when wanted. Without good filing systems, which will enable information to be located on the spur of the moment, the greatest advantage is lost. How many of you have had a farmer call in your office and ask for a method of treating some crop for disease or insect control, and possibly you were not as conversant with this as you should be and started to look for the information and could not find it? Such a situation is always embarrassing and leaves a bad taste in the farmer's mouth. If you could have lain your finger immediately on the desired information and pulled out a bulletin and said "This bulletin will cover your situation entirely" you would have made a friend and booster out of this man.

Of course, the office help in the County Agent's offices should be of such a character that they can grasp the idea of the work in a broad sense. They must realize that they are there for more than just writing letters, filing, and keeping the office open. Many a time have I come into the office and caught my stenographer discoursing with some farmer relative to improved methods which she has heard me discuss with them in the office at some previous time. She has been able to locate information desired for these farmers because she was interested in the work. When I had occasion to move from this county into another county and my stenographer, being my wife, naturally went with me, I believe that the farmers regretted seeing her leave the office as much as they did myself.

I hope that the above discussion has brought out some ideas relative to stenographic help, and I firmly believe that the efficiency of a County Agent's office can be doubled through the employment of wide awake office help. As a consequence the farmers will receive a greater benefit and service from the County Agent's office, and, it has been my experience, will demand that those having power to appropriate funds for its continuance shall continue to do so.—*H. W. Biedermann, County Agricultural Agent, Dawes County, Chadron, Nebraska.*

Controlling Diseases by Destroying Weeds

(*From page 23*)

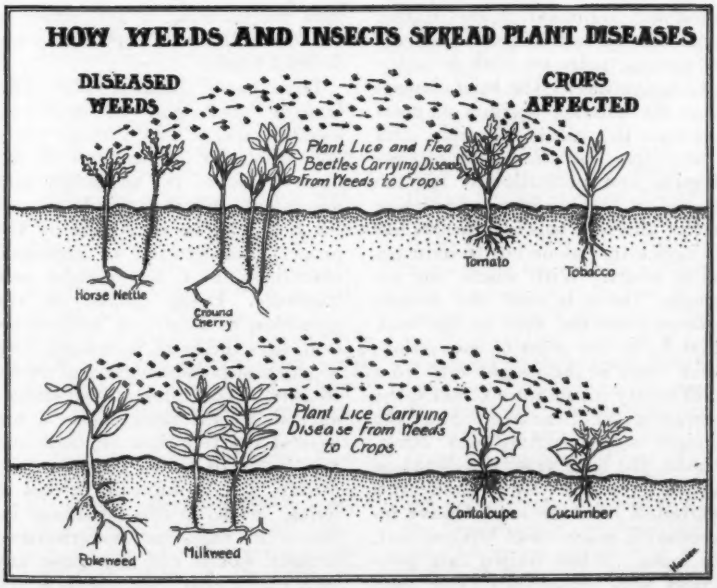
down with fruitful results. It was discovered that tobacco mosaic, which is likewise distinguished by mottled leaves, is also harbored by virus-infested bull nettles and ground cherries and once again a campaign of weed destruction is recommended in and near the plant beds. It is further urged that both tomato growers and tobacco farmers keep the plant beds clean of weeds throughout the year instead of permitting them to "run to weeds" as is so frequently done after transplanting time.

There are other mosaic diseases that are similarly harbored by weed culprits; of special importance may be mentioned white pickle disease in cucumbers and an unnamed trouble that causes melons to become stunted and poor in flavor. One authority informs me that the presence of the mosaic disease white pickle in cucumbers has been the main reason why the industry that supplies the principal ingredient of the well known 57 varieties has gradually been driven westward to escape the ravages of the virus. The trouble shows up in the form of mottled, unthrifty fruits the green warts of which have whitish backgrounds. In this case com-

mon pokeroot and milkweed are the weed reservoirs of the disease and the contaminating virus is transferred to the crops through the agency of plant lice and the striped cucumber beetle. The virus lives year by year in the deep running roots of the milkweed or the fleshly underground parts of pokeroot and the shoots that arise in the spring offer the first opportunity for the insects to carry the disease to the crops in the field. Once again, field tests have demonstrated the practicability of preventing white pickle and the stunted melon disease by destroying milkweed, pokeroot and wild cucumbers in the vicinity of cantaloupe and cucumber fields, particularly in and near the plant beds.

Pokeroot is usually destroyed by grubbing. Occasionally old plants possess such massive roots that grubbing is a difficult operation; in such cases pouring some waste automobile oil on the roots or applying a pound or two of salt will effectively prevent sprouting. Where milkweeds grow in profusion, the use of the knife or gopher blade cultivator combined with hand hoeing in the hills or rows is an excellent method of starving out the creeping roots.

There are a number of other plants in which destructive diseases lurk, among the most familiar of which are the common barberry, carrier of black stem rust of wheat, and the common Juniper or red cedar, harborer of apple rust. In these cases, however, the wind acts as the distributing agency and trouble is due to fungi instead of viruses. The discovery of the virus-inoculating insects is a big step forward in our knowledge of plant disease control and emphasizes more strongly what undesirable citizens weeds really are.



A New Demand for Lower Freight Rates

(*From page 14*)

structure may be developed, which makes for both agricultural flexibility and industrial stability. The Grange argument goes more deeply and more searchingly into this whole problem than any other brief presented, and forms a complete reason and defence for both the action of Congress in adopting the Hoch-Smith Resolution and for the Interstate Commerce Commission in making a freight rate structure readjustment.

It is therefore evident that the opposition expressed in terms of defence of the railroads is not an answer and not called for: Nowhere in the brief is there an effort to indicate that the *total* income of railroads from freight rates should be reduced.

I BELIEVE the readers of BETTER CROPS will be interested in the economic argument made in this brief relative to the injurious effects of existing rates on both industry and agriculture. The brief charges that the existing division of costs between the points of origin, and conversion, and the points of conversion and utilization is far too heavy on the origin to conversion sector and that this is injurious not to agriculture alone but to industry as it exists. With wheat, for example, there is first the freight charge from the field to the mill, that is, to the point of conversion; then there is the freight rate from mill to city consumption, that is the second sector of the cost. Since the freight rate structure was established, the brief says, the distances through which foods and raw materials must be hauled have increased in many cases 100 per cent, or more. When freight rate principles were established New York got its wheat from the Genesee valley, now it comes from the center of the state of Kansas. But the industrial center of the United States still stays on the Atlantic coast, or nearby.

The high freight rates on food stuffs and raw materials, is pinching the industrialist whose place of residence is in the industrial center, where he is tied by economic bonds. This is threatening the industrial fabric of the country. Factories can move; additional freight charges, at best a mere incident in the final price of the manufactured article can be passed on to the consumer, but agricultural shifts are in accordance with laws of weather, soil adaptability, the depletion of fertility or the cost of its maintenance, and the freight cost, about the only constant in the problem of determining the actual cost of a farm product at any particular time, is hard to pass on to the consumer. So agriculture suffers. But along with the suffering of agriculture is the disturbance of the whole industrial fabric.

Both these diseases, says The Grange brief, can be modified, lessened, spread over a longer time, and wholesale dislocations of industry, and of the secondary and dependent agricultural industries of the East, can be prevented by the proper consideration of economic conditions in a new freight rate structure. Every phase of the operation of interstate transportation, says the brief, is charged with the highest possible degree of public concern. The present out-of-balance in freight rates causes a bar against the free flow of foods and raw materials to the centers of industry, and an increase in cost of living, while a corresponding increase in rates on manufactured articles would not interpose any such bar against their free flow, and industries conducted under cover, humanly controlled in the main, not

subject to climatic and weather vagaries and risks, can, and may, move as economic conditions make necessary. They should be compelled to move just as little as possible, so that industrial stability may be disturbed just as little as possible. Flexibility of rates on agricultural products as centers of production vary, and fair consideration of economic relationships, should become the policy of the Interstate Commerce Commission.

SECRETARY of Commerce Herbert Hoover is quoted by Dr. Atkeson as follows:—

"Another vivid question in this connection is that of the rates themselves. In an era of wide disparity between farmers' income and, that in, and of industry, the transportation rates have proven to be a heavy burden on agriculture. On the other hand, under present conditions railway earnings are obviously not large enough to assure railway expansion. Some relief both to railways and to the farmer may be obtained by thorough reorganiza- of the rate structure."

The report of the Anderson commission is freely drawn on for support and statistics. Following are some abstracts:—

"Freight rates are still too high to permit the production and marketing of hay at a profit."

"These tables show in a most emphatic way the effect of an out of line relation between the price level of farm commodities and the price level of transportation, and establish the necessity of freight rate reductions upon barley, corn and oats."

"Freight rates on perishables normally take about one third of the selling price, frequently running as high as two thirds; these rates in periods of low price levels and slight demand constitute a very heavy burden on this traffic."

"The Commission makes the following recommendations:— That the transportation rates on many commodities,. more especially the products of agriculture, bear a disproportionate relation to the prices of such commodities; that there should be immediate reductions in transportation rates applied to farm products and other basic commodities. * * * That the pyramided per cent advances in rates which have been authorized by the Interstate Commerce Commission or made by the United States Railroad Administration caused the dislocation of long standing relationships between rates upon agricultural products and rates upon industrial products. * * * That in establishing the general level of rates and commodity and class rates the Federal and State Regulatory bodies give greater consideration to existing and prospective economic conditions.

The brief concludes with the following pointed reference to the railroads' tacit acquiescence in the demand for lower agricultural rates when the attention of the public was turned toward the question of Pullman sur-charges:—

"Many spokesmen for the railroads recognized the force and justice of the demand for lower rates on agricultural products by their statements and arguments made but a few months ago when the question of reduction of the sur-charges on Pullman rates was up in Congress. A much used argument by the railroad interests and one which was specially directed to the agricultural organizations that stood very solidly in favor of the elimination of the gross injustice which is found in the present arrangement of making a passenger pay a much higher rate for passenger service if he uses a Pullman coach than if he uses a railroad coach, was an argument directed at the self

interest of agriculture in about these terms. 'We will not be able to grant you the reduced freight rates to which you are now entitled, if this revenue from Pullman sur-charges is cut off.' Agriculture took the railroad spokesmen at their word, and is now asking that their part of the implied bargain be kept, and the freight rates reduced."

Two statistical tables and a chart are made use of in The Grange Brief, as follows:—

The average contribution made by agriculture to the maintenance of the railroads through freight charges is out of line with the average contribution made by the only other comparable freight producing industry, namely, manufacturing.

Table No. 1

	Total Value Annual Production, 1919*	Total Contribution as Railroad Freight Rates Payments, 1923†	Per Cent
Farm Products, incl. Forest Prod.	$21,425,633,614	$1,343,967,000	6.23
Manufactured Products	62,418,078,773	1,319,111,000	2.11

*Census 1919. †I. C. C. Statement No. 24,187.

The freight rate charged against each ton of agricultural products handled by the railroads is out of line with the freight rate charged against each ton of other products.

Table No. 2—Revenue

	Tons Carried (000 Omitted)	Revenue (000 Omitted)	Per Cent of Total Revenue	Rate Per Ton
Agriculture	220,518	$672,433	14.5	$3.49
Animals and Products	48,878	242,730	5.3	4.97
Minerals	1,250,314	1,466,592	31.7	1.17
Forestry Products	222,570	419,807	9.1	1.84
Manufactured articles	517,915	1,319,111	28.5	2.54
L. C. L.	73,589	503,726	10,9	6.81
Total	2,333,787	$4,624,399	100.	....

(All figures in this table are from I. C. C. Statement No. 24,187 except column 4, compiled from Columns 1 and 2.)

Cutting the Waste in Food Handling

(*From page 7*)

with delay in transit but for which the carrier is not wholly responsible, is the failure of the shipper to avail himself of the best service, for his purpose, furnished by the carrier. This is especially true in express shipments. Heavy losses on dairy products have been found to be due usually to failure to forward the products on trains rendering the quickest service.

Most food products are subject to injury if not carefully protected and handled. If bruised during picking or packing the products start to the market under handicaps. During transit, cars are often handled roughly. Packages are broken and the products are bruised. Deterioration is begun and its pace is rapid.

An indication of the magnitude of loss from rough handling is shown in the fact that railways in the United States paid out over $6,000,000 in damage claims on foods during 1921 because of rough handling of goods and cars. Failure of refrigeration and ventilation equipment to function properly cost an additional $2,500,000 in damage claims in that year.

MOST food products require protective packing for the marketing process not only to protect the product from injury, but to facilitate handling. The practice of packing food commodities has become almost universal, but much damage comes from faulty packing. A pack may be too slack, permitting the contents to shift in the package and become bruised, or the packing may be too tight and result in crushing the contents.

Much of the damage from faulty packing comes from containers not sufficiently strong to withstand the handling to which they are subjected. In proportion to the amount carried, eggs form the heaviest item of railway and express damage, the losses being due in large measure to the use of second-hand cases and fillers.

Salvaging decayed potatoes received at terminal.

Faulty marking of packages in express consignments and less-than-car-lot freight shipments are other causes of loss. Packages are often so poorly marked that delivery is impossible and the perishable products are left on the hands of the carriers, to be resold to cover transportation charges.

Investigations show that even well-packed products are not likely to go through transportation in good shape unless the packages are properly loaded into the car. Loose loading, improperly braced, allows the package to move about and in many instances results in destruction of containers and serious damage to the contents.

Most food products are subject to loss through shrinkage. In some cases this is a natural loss occasioned by time, and it cannot be prevented. It is estimated, for example, that the shrinkage on potatoes arriving at New York averages approximately 21 bushels per car. On this basis the total loss on some 20,000 cars coming to New York City in the course of a year is around 420,000 bushels.

Shrinkage occurs not only in transit, but while the potatoes are in storage and in the hands of the wholesale and retail merchants. The loss while in the hands of the country shippers averages around 1.75 per cent, which, added to loss in transit, brings the total shrinkage to five per cent for the period between the time the potatoes leave the farm and their arrival at terminal markets.

LOSSES on account of insect pests and diseases emphasize the fact that good marketing depends in no small measure upon good farming. The conditions of transportation tend to bring to light concealed defects caused by insects and disease during the development period of the products. Improved marketing methods may help to deter development of these defects but they will not eliminate them. Elimination must be done by growers through improved farming methods.

The records show that 59 per cent of all defects appearing in 3,676 cars of produce inspected in New York City by the United States Department of Agriculture was from disease. Nearly all of the defects in cherries, grapes and watermelons came from that source. Heavy losses are shown also on lettuce, peaches, potatoes, tomatoes, cabbage, and other products. Nine per cent of the condemnations by the Board of Health was due to insects.

Fresh fruits and vegetables made up 31 per cent of the total railway claims for loss and damage. These expenditures do not cover all losses, inasmuch as considerable loss is due to causes, the responsibility for which is not assumed by the railroads. For example, in the matter of eggs arriving at New York City, the settlements average about one-half of the amount claimed.

The railway and express companies have made a more exhaustive study of egg losses than those of any other commodity. Educational campaigns among producers and shippers have greatly reduced the losses on eggs in recent years, but the losses still run well over 250,000 cases annually at New York alone.

The data here presented were developed in a cooperative study made by the United States Department of Agriculture and the Michigan Agricultural College. They present striking evidence of the great need for better preparation and transportation of farm products if marketing costs are to be reduced. Their elimination means higher prices for producers, more efficient use of transportation and marketing agencies, and lower prices to consumers.

There will always be circumstances in which it will be more economical to permit the loss of product rather than to incur the

necessary expense to save it, but in the main the losses are preventable and they can be greatly reduced. To do so requires cooperation all along the line from producer to the ultimate distributor, encouraged by the dissemination of practical information by county agents as the representatives of the agricultural colleges and the Federal Department of Agriculture.

A Wheat Experiment

By *James S. Morse*

WHEAT is one of the crops that does fairly well on many Eastern farms and fits into the rotation in various ways as it does not conflict with the other grain crops, either at planting time or at harvest time. The plowing and fitting of the wheat ground can usually be done at a time when the teams or tractors are not busy at other regular farm work; besides thorough cultivation of the ground during the month of August is a splendid way to destroy weeds. In many sections we find that the best way to get a good seeding of timothy and clover is to sow the seed with wheat in September, or in the early spring when the wheat ground is still loose and soft.

The straw from the wheat, especially the beardless varieties, is ideal for litter as it lies up loose and light and absorbs moisture well.

At present, the outlook for fair profits from wheat seems to be good. While the bears have made a great effort to hold the price of wheat down for the past few months, the price is gradually coming back and eastern millers are forced to bid up in order to supply their needs.

Wheat is not normally a high yielding cereal, as in some states the average yield is only twelve bushels per acre; yet under favorable conditions, and with an adequate supply of complete fertilizer, we have been able to raise forty bushels per acre and sometimes even more. In one experiment which was carried on on my farm, on land which had not been manured for some time, we had quite a remarkable result from using a liberal application of complete fertilizer. The following is an accurate report of the experiment:

Plot one, with no fertilizer, yielded only thirteen bushels per acre, while plot three with about six hundred pounds, of 2–8–6 per acre, yielded forty-five bushels per acre, or thirty-two bushels more than plot one. The cost of six hundred pounds of 2–8–6 fertilizer is now about fourteen dollars and wheat is selling readily as poultry feed at two dollars per bushel. Deducting the cost of the fertilizer, which is $14.00, form the value of the increased yield of wheat, which was $64.00, shows a profit of $50.00 from the fertilized plot over the plot with no fertilizer. This is the result of the wheat crop alone, but this is not all; the plots were all seeded to alfalfa, and for three years the effect of the fertilizer could be readily seen on both the first and the second crop of alfalfa.

With the present outlook for better prices of wheat, I am persuaded that it is wise to use a liberal application of highgrade fertilizer.

What Agriculture Needs

The greatest help to agriculture will be the improving of working and living conditions on the farm. The atmosphere of farm life and farm work must be changed so that agriculture will attract instead of repel the young people who would naturally follow that work. The keeping or attracting of a more intelligent class of young people would soon put agriculture on an equal footing with other businesses. —*L. C. Kerns (ex-farmer), St. Joseph, Mo.*

Use of Stilts in Tree Wiring

(*From page 21*)

The question is often raised as to whether or not a harness ring is preferable to an iron washer for use in the center of the tree. Both are in use at the present time. From the experience which I have had I would certainly recommend the use of a harness ring in all cases. The principal advantage of the ring seems to lie in the fact that a wire fastened to the ring is not bent as sharply as it is when it is fastened to a washer. The thinness of the washer causes a very sharp bend in the wire, and this in turn seems to cause the wires to break frequently at this point several years after the wires are installed. In addition to this, the washers rust sooner than the harness rings, which commonly have the black japanned finish and are an inch and a half in diameter. It is true that the rings are slightly more expensive than the washers, but it is poor economy which thinks not of the future.

When the various details are properly attended to, the system of wire braces should, in most cases, be as lasting as the trees themselves. This is an outstanding advantage of the wires as compared with wooden props which have been so commonly used for the same purpose. The materials necessary for wiring an average tree requiring eight wires will cost about twelve cents, while eight props would cost in the neighborhood of fifty cents. The props are good for four or five years, while the wire braces are good for twenty to thirty years or more. Is there any question as to which method is the most economical as far as materials are concerned?

Now suppose we look into the matter of the relative amount of labor required by the two systems. Of course, wooden props can be put up somewhat quicker than a system of wires could be installed. But over a period of twenty years, the amount of labor required to set up the props each year would be greatly in excess of that required to wire the orchard once and for all. So it is evident that it is much cheaper to support the limbs by wires rather than by props, *both* from the point of view of materials and labor.

In addition to being cheaper, the wire braces are decidedly better and more efficient. They do not interfere with cultivating, irrigating or harvesting, as do the props. The wires can be installed at almost any season of the year, when there is a slack period with little else to do. Props are frequently dislodged by windstorms and the overloaded limbs break off. This cannot happen in an orchard that is braced with wires.

THE latest development in tree wiring is the use of stilts instead of a ladder in attaching the wires to the limbs and to the central ring. This method is well shown in the accompanying illustrations. One of the photographs shows two men working on an old peach tree. The man at the left is fastening the wire to the screw eye, while the one at the right is starting a screw eye with a hammer. Both men are wearing carpenter's aprons to hold the necessary screw eyes, rings and staples. The ring may be seen suspended by wires in the center of the tree. It may be observed that the stilts are constructed with the foot supports about four feet from the ground. This proved to be just about the right height for working on the trees in this particular orchard, which happens to be that of Eugene G. Cutter, of Sacramento, California.

Those who have tried the method say that after they are once used to walking on stilts, it is much

A close-up view, showing the construction of the stilts used in tree wiring.

About Ourselves

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easier and quicker than to move a ladder from place to place in order to reach all of the limbs. One does not feel as tired at the end of the day's work as if he had been climbing up and down a ladder all day long. The work can be done entirely from the stilts and there is ordinarily no need to get down during the operation. Before beginning the work, about 200 feet of wire should be uncoiled in the opposite direction to that in which one intends to move down the row from tree to tree. When working on the stilts, the end of the two hundred foot wire is first fastened to a screw eye. The wire is then run to the center of the tree and cut off, leaving just enough extra to fasten the wire to the ring. When making the cut, care should be taken not to drop the end of the main wire, but instead, hook it over a nearby branch where it can remain until needed for attaching to the next screw eye. In this way a supply of wire is always available for continuing the work. When a tree is finished, the end of the main wire is taken to the next tree and the work progresses in the same manner.

The other illustration shows a close-up view of one of the workers on stilts. It may be seen that the stilts are home-made and that there is a block on the bottom to prevent their sinking into the loose orchard soil. The stilts are made of 1" x 3" material, well braced with wires held under tension by short pieces of wood perpendicular to the stilts. A good support is furnished for the feet, including a piece of metal bent up at the corners to keep the heels from slipping off, and a strap over the toes. An old piece of harness was utilized to make the support at the top of the stilts going around in back of the operator.

This new method of doing the wiring has proved so successful that it would seem well worth trying out wherever there are trees in need of supports.

The Burning Question

(*From page 11*)

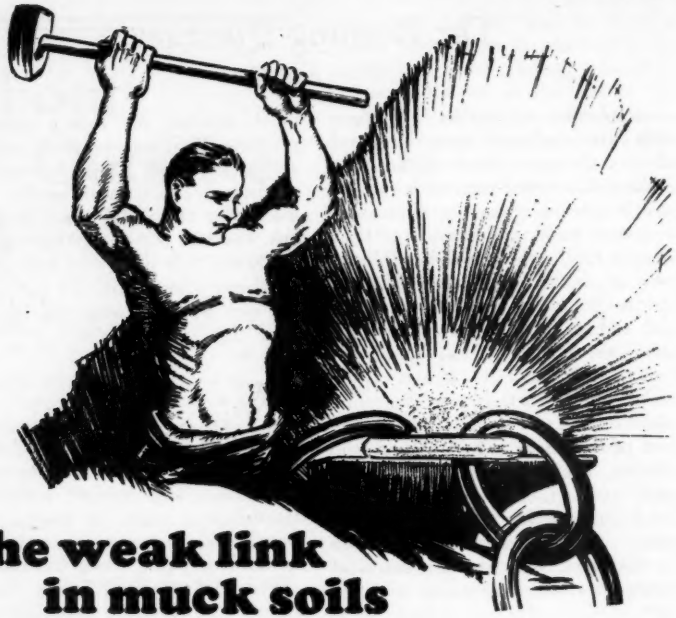
accumulation of stalks interferes with future cultural operations and hinders the movement of moisture in the soil, is true to a certain extent, but is generally much overrated. A more valid objection is, that when a hay crop for market follows corn or sunflowers, some stalks are apt to be raked up with the hay and reduce its market value. In all of these cases, if the ground is first disked and cross-disked, there will be little further trouble. The effect on the soil ought to repay the cost of disking. When a hay crop follows, the roller should be used after seeding, to leave a smooth level surface for the mower and rake. The maximum cut will then be obtained, with the minimum of foreign matter gathered up with the hay.

It may be objected that the use of the roller should always be followed by the spike-tooth or some other harrow, to re-establish a mulch. This, too, has been overdone. Rolling compacts the soil and brings up moisture more rapidly by capillary attraction. The effect on evaporation of soil moisture is opposite to that of mulch. But with small seeds that *must* be planted shallow, the roller must be used to insure a sufficient supply of moisture for germination and early growth. The drier the climate, the more necessary it is to use a roller for this purpose. After the crop is well started, the mulch may be re-established by harrowing. Sometimes it pays to do so, and in other cases there is very little effect, because the crop increasingly reduces evaporation by shading the ground and reducing the wind velocity at the ground surface. If the harrow is going to loosen up partly buried stalks so that they will be gathered up when raking the hay, the advisability of harrowing may be reconsidered. It will be most needed on heavy soils to promote aeration—on such soils the stalks are most likely to stay put anyhow. The smooth surface produced by the roller gives a longer cut, because the cutter bar may be set lower, less wear and tear on the machinery, less dust and rubbish in the hay, and it is easier on the man who rides the mower.

WHEN the crop residues contain insect pests it is generally considered necessary to burn the material. The maize stalk-borer furnishes a case in point. The South African species is not the same as the European, which has recently invaded the United States, but its habits are similar, especially the habit of wintering over in the stalks. The statement that burning is the only remedy is, however, not correct. The stalks must be cut off at the ground surface and disposed of in some way that will destroy the borer. Making stover silage will do this—so will placing the stalks in a small feeding yard where they will be thoroughly trampled. On a smaller scale, for example, in market gardening, they can be dumped into a compost pit and thoroughly soaked with water. These methods can't always be applied, but where they can, they are better than burning. The pupae that remain in the stumps can be "spiked"—this is easier and better than stumping and burning.

Ash is very useful, for feeding to stock to supply calcium and phosphorus and for fertilizer. It should never be wasted. But we shouldn't be in too big a hurry to produce it when there's a better way of using the material.

The cheapest way to get potash is to buy it. Some people think differently, but they are wrong.



The weak link in muck soils

THE strength of a chain depends upon the strength of each link. When one link is weak, the whole chain is weak. Likewise, the fertility of your soil depends upon each of the essential plant foods—

Potash—and sometimes phosphoric acid—is the weak link in muck soil. To produce good crops on muck soil, apply plenty of potash.

In Portage County, the Wisconsin Experiment Station grew potatoes on two adjoining plots of peat soil. The yields showed that 400 lbs. per acre of a 0-8-24 mixture resulted in an increase of 103.7 bushels of Early Ohio and 119.8 bushels of Rurals, than when no fertilizer was used. In other words—

The Wisconsin Experiment Station found that the use of a mixture containing 24% potash produced a good paying crop of potatoes on muck soil.

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Growing Dewberries in the Carolinas

(*From page* 9)

young plants commence to grow in the spring.

The plants are not staked the first season. They are allowed to grow on the ground as they will. Stakes are usually driven in the ground next to the new plants during the second winter, but the plants are not tied up to the stakes until late March or early April. It has been found advisable not to tie them up until danger from freezing weather has passed.

Stakes from one to one and a half inches square and from six to seven feet long are used. They are driven in the ground about twelve inches deep, and two or three inches from the crown of the plant.

THE vines are tied at two or three places on the stake. The first tie is usually two to two and a half feet from the ground, and another at the top, which is about five to six feet high If the vines are quite heavy, another tie is made half way between these. A soft cotton string is used. The vines are clipped off above the top of the stake, usually one and a half to two feet above it. This tieing up and clipping is done early in the spring, usually around April 1, and immediately afterwards cultivation is started.

Just ahead of this first cultivation in the spring, 800 to 1,000 or more pounds of commercial fertilizer is applied. An 8–4–6 the same kind that was used soon after the plants were set, is considered best. If the soil is quite rich of course the nitrogen may be reduced and in this case an 8–2–5 or an 8–2–6 is commonly used. Cultivation is kept up until late May or early June.

Immediately after harvesting is completed, the strings are cut loose and the old vines and new growth cut off smoothly with the ground. All of this material is either burned in the field or hauled out and burned. A common practice is to pile these old vines in every other middle, allow them to dry for a few days and then burn them. They are put in small piles so the burning will not interfere with the stakes or crowns.

The stakes are left where they are, and immediately after the vines are cut and burned, cultivation starts. It is customary to do what is known as bar off the rows shallow, which consists of running a turning plow furrow up close to the plants on either side and throwing the soil to the middle of the row. At this time, another application of 800 to 1,000 pounds of 8–4–6 commercial fertilizer is given, as new plants must now be produced for the following year's crop. Shallow cultivation is kept up throughout summer and into early fall. The vines are allowed to remain on the ground throughout the following winter and up to March 15 to April 1, just as they were handled the first year, and then are again tied to the stakes around April 1. This operation is repeated year after year.

THE following method is practiced by the growers who produce their own plants for setting new fields. Cover the tips of the vines that are hanging over on the ground. Cover with about as much dirt as is ordinarily used for covering corn. Throw it on the tips and pack it. Do this in early fall. Allow them to remain late in winter. Then cut off the stem of the old plant, leaving the stem to the new plant five to six inches long. Then dig just as any other plant is dug.

A rule that many growers follow to determine when the plant roots are developed enough to be dug, is

to wait until the roots show a brownish cast. If they are white in color, this indicates that they are too tender, and not yet ready for digging and transplanting. As soon as the brownish cast is taken on, however, which is usually in late February or early March, they are ready for digging.

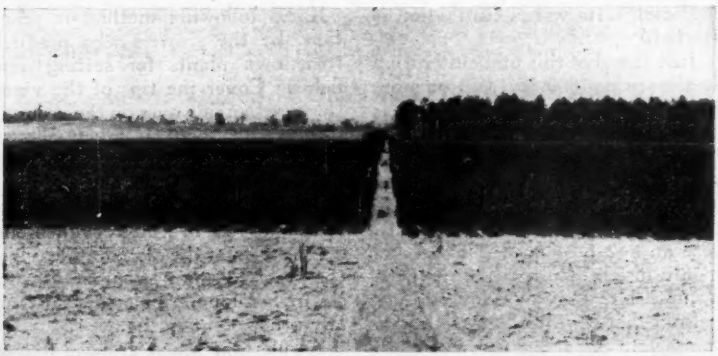
The harvesting season usually commences from May 25 to June 10, depending on the season. Normally the picking season lasts from three to four weeks. The vines are gone over every two to three days. If the berries ripen quite rapidly then every other day is not too often, but every third day is all right if the season is not favorable for rapid ripening.

SHIPPING dewberries is a very treacherous proposition. They do not carry as well as strawberries. Therefore it is of the utmost importance that the picking be done most carefully and that the berries be handled and shipped with extreme care. Berries that are overripe, bruised, immature, or inferior in any respect, must be avoided if they are to be put on the Northern markets in good condition.

The ordinary tray used by strawberry pickers is used in picking dewberries. These trays hold eight quart berry baskets. It is absolutely necessary in picking the berries that they be taken out of the sun immediately after they are picked. If left in the sun for any length of time, they turn to a brownish red and appear somewhat scorched. The pickers do not handle the trays. Men come through the fields, take up the trays immediately after they are filled, and carry them to a wagon, where they are immediately hauled to the packing shed. The berries are hauled on wagons with springs and pads in order to avoid bruising.

The berries are picked with the caps on them. They go down quicker if the caps are pulled off. Immediately after the berries are packed, they are put in the ordinary 32-quart strawberry crate, which is the one almost universally used. They are then loaded into refrigerator cars. On account of being so difficult to ship, they are always sent to market in refrigerator cars. Because of being so perishable, dewberries cannot be packed as many crates to the car as strawberries. They are only loaded two high and six wide. An average carload is around 192 crates.

The average yield is around 75 to 100 crates per acre. Some growers have produced as high as 250 crates per acre on an especially good piece



The farm of J. Dockery at Hoffman, South Carolina, where 20 acres of dewberries are under cultivation.

of ground, and where special attention was given the plants. Before the world war the berries sold for an average of 10c a quart on Northern markets, and the grower received a fair profit. Because of increased freight rates, and the increase in cost of everything going into the production of dewberries, including crates, labor, etc., this price will not now give the grower a profit.

A DISEASE known as anthracnose has given the dewberry grower considerable trouble in recent years. This is a fungous disease which attacks the plant and produces small purplish spots which gradually change to a dirty white or grayish color. It spreads rapidly. It not only attacks the canes, but the leaves and fruit. Usually however, the most noticeable signs of the disease are on the canes or the fruit. When it attacks the fruit, it causes it to turn a brownish color. Often the berry becomes dry and woody. Not only is the fruit thus lessened in value but unless the disease is checked, the vines are killed.

Usually this disease appears when the canes are from 12 to 18 inches high. A fair degree of control can be brought about by spraying with 4–4–5 Bordeaux mixture. The first application is given when the vines are 12 to 18 inches long and is repeated once every three or four weeks until frost appears. Further precaution necessary is to see that all old vines are cut off immediately after harvest and burned. Also, all dead leaves should be immediately plowed under. In addition to the above, spray in the spring with Bordeaux, just as the leaves begin to come out. About the time the leaves are well developed, give another application. Spray the third time just before the blossoms come out.

Whatever Your Question

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Early Days in the County Agent Work

(*From page 5*)

fidence of the farm people which enabled him to get his work before them in a manner that made it of great and lasting value and made permanent friends for the work.

THE early county agents not only had to do good work after they were established but they had to blaze entirely new paths into the understanding and confidence of the people through walls of total ignorance and suspicion of what a county agent was and of what he was supposed to do. At the outset much of the agent's time was devoted to the farm visits and personal service. For it was only in this way that they could win a place for themselves among their farmers. Nevertheless the early county agent soon discovered the impossibility of covering an entire county or group of counties by individual farm visits and some agents soon developed community organizations and groups with whom and through whom they carried on much effective work.

Financing county agent work was then somewhat more simple and less laborious than it is now. There were no farm bureau memberships to be kept up nor for the county agent to worry about. In many counties a number of business men, bankers, the commercial club secretary, or a group of progressive farmers would start the movement to get a county agent, either at the suggestion of the state leader of county agents, or from hearing of the work in some other county. Then a committee of business men and farmers would ask the county commissioners for an appropriation for the support of the work in cooperation with the State and Federal Government. Frequently funds would come from other sources, such as commercial clubs, railroads, and county high schools. In a number of states some counties received money from the crops improvement committee of the Council of Grain Exchanges of Chicago and the $1,000,000 fund offered by Julius Rosenwald.

IN Boulder County, Colorado, C. L. Hoover, a very progressive and prosperous farmer, was the leader in securing a county agent as well as in organizing an agricultural-commercial association which functioned similar to the present farm bureau. He was assisted by other farmers and the Boulder and Longmount Commercial Club. In Morgan County there were several local organizations which were federated into the Morgan County Federation of Agricultural Clubs. Each club had two representatives on the county board.

Frontier life was still in evidence in many parts of Colorado. One day J. A. Sexton, Superintendent of the Logan County High School, C. L. Hinman, State Superintendent of Farmers Institute, D. C. Bascom, Logan County Agent, and myself were chased 10 miles across the prairie by two men with a gun who claimed someone in our party had spoken discourteously to the waitress in the restaurant at Haxtun where we had eaten our supper. The man with the gun was intoxicated and, as we were somewhat doubtful as to what he might do, we left him and his companion standing in the road where they had stopped us after arguing with them a while and drove on our way. Another time Prof. Gilbert and I went down into the Paradox Valley of Southwest Colorado to hold a series of meetings. When we arrived at the railroad station on the narrow gauge railroad to take the stage coach for a 75 mile drive in-

land, the man who was to meet us was in jail for killing a man the previous day. Several times on the trip the driver would point out spots where someone had been killed. We breathed sighs of relief when the two weeks' trip was over and we were once more back on the train bound for home. The stage-road up from the river to the plateau valley was so narrow that when two vehicles met, it was necessary for the passengers to dismount, and to back one stage or wagon out on the edge of the cliff, in order to allow the other to pass by on the inner side.

W. H. LAUCK and D. C. Bascom were the first two agents in Colorado, L. M. Windsor the third, Stanley D. Smith the fourth, A. C. Cooley who succeeded Windsor the fifth, William Harrison the sixth. H. H. Simpson was the seventh agent in Colorado, in place of the third as stated by Tedmon.

Windsor had the entire San Luis Valley, a vast mountain empire of 7,000 to 8,000 feet elevation surrounded by lofty mountains on all sides. It comprised five counties Conejos, Costilla, Rio Grande, Saquache and Alamosa. He and his successor, A. C. Cooley, who was later Extension Director in New Mexico and I spent many days riding over the valley through the sand and alkali dust visiting widely scattered and isolated farms to establish and visit demonstrations and to conduct meetings and tours.

The agents in the San Luis Valley held meetings in the southern part of the Valley among the Mexicans where they had to talk through an interpreter.

One day Windsor and I went up into the mountains around the valley to see Piper in charge of a biological survey party about rodent poison. To reach the camp we descended a steep hill covered with loose rocks and gravel. When we tried to go back the E. M. F. Roadster would not pull the hill on account of the loose soil, and about the time we had given up in despair to wait for Piper's boys to return from their day's work and give us a lift, a sheep herder rode up. He uncoiled his lariat and had one end fastened to the car and his wiry mustang dug his feet into the hill and gave enough pull to take the car up the hill in quick order.

THE agricultural tour was a popular and profitable enterprise with many agents. From a dozen to seventy-five cars would go along to study dairying, silos, alfalfa, summer tillage, and all manner of

County Agent Smith in foreground and D. W. Frear demonstrating the construction of a pit silo.

farm practices. Smith and Lauck held a good many pit silo construction demonstrations. These consisted of digging a circular trench about a foot deep and six inches thick just the diameter of the silo. This trench would be filled with concrete. When the concrete was set the inside would be dug out to the proper depth. As the digging progressed downward the sides of the silo would be cemented directly on the silo so when the bottom of the soil was reached the cement wall was finished.

One night after a late meeting Lauck and I were invited to stay at a farmer's house out about 30 miles east of Colorado Springs. As is my custom I placed my watch under my pillow so as to be able to see the time in the morning. I went away the next morning forgetting my watch. When the farmer, who was an ex-preacher, discovered my watch under the pillow he was quite angry. He said it had been placed there because I was afraid it would be stolen and by doing so had insulted his family.

One of Lauck's cooperators and demonstrators was an ex-Chicago League baseball player by the name of Childs who was trying to wrestle a living out of a dry farm in Eastern El Paso County, Colorado.

THE definitely written project as the basis of county agent work was the dream of many of us early in the work, and in 1914-15 the major lines of work in Colorado Counties were placed under written projects which were more general and more elastic than the formal project which is in use in Missouri today.

Boys' and girls' club work developed rapidly in many of the counties and soon became one of the major lines of work to be carried on. Bascom printed a complete boys' and girls' club circular about 1913 or 1914 which was possibly the first publication of its kind to be issued in the west.

In the sparsely settled counties of the west it was not unusual for a county agent to carry food supplies and bedding in his car in anticipation of being stalled at night out on the prairie or desert, miles from town or even a house.

In the early days it was customary for everyone, including county agents, state leaders and specialists and directors, if any, to attend the annual conference in Washington. Here is where some of us met for the first time W. J. Spillman to whom must go the credit for starting the work in the northern and western states; C. B. Smith, at present in charge of the work for the entire country; and O. H. Benson, the rapid fire boys' and girls' club leader. To D. W. Workings belongs the credit for establishing the work in a number of western states, in the pre-Smith-Lever days. Others that I remember at earliest conference are: Crocheron of California, Hibshman of Pennsylvania, Dodge of the New England states, Wilson of Montana, Evans of Utah, Bowman of Wyoming, Burritt of New York, Coverdale of Iowa, Wilson and Baker of Minnesota, Hatch and Otis of Illinois, Cook of Ohio, Mumford of Michigan, Cooper of North Dakota, Johnson of Kansas, Pugsley of Nebraska, Hunter of Washington, Gilbertson of New Jersey, as well as many others.

Of the Department of Agriculture there were also Clinton, Brodie, Thompson, Lloyd, Goodrich, Dixon, Goddard and many others who always participated in our conferences, in addition to the lone woman worker in Home Economics, Miss Bailey, I believe. Last, but not least, there was always on the job, Spillman's efficient secretary, Miss Nellie V. Price, whom to know was to like.

At the first large conference in Washington a quartette, composed of Bascom, Lauck and Windsor of Colorado and Bowman of Wyoming, entertained the crowd with several

(*turn to page 48*)

Fear

(*From page 4*)

The enemy of worry is knowledge and knowledge is the result of work. So we see that work brings knowledge and banishes worry.

Everything in Nature has its natural enemy — the mouse, the cat; the chicken, the hawk; the rabbit, the dog.

And, the fear-thought's natural enemy is the joy-thought. To stamp out fear, be joyous, even if you think you have nothing to be joyful about. It can be done. It *has* been done.

THERE is an intelligent fear which cannot be banished—an instinct of self-preservation, the aversion to death, which results in a natural clinging to life. We refuse to follow Blondin across Niagara on the tight-rope because we fear our ability to balance ourselves as he does—and we know a slip means Eternity.

This is normal fear, and is good. It is sub-conscious. We do not have to watch it.

But the daily fears which catch us by the heels and threaten to throw us are not normal nor good. They paralyze the circulation.

Doctors know that fear sometimes stops the heart completely. We say the man was frightened to death. But in a lesser degree each of our fears impairs the circulation, although not noticeably — just enough to prevent true digestion and cause gastric disturbance.

And a sour stomach causes *more* fear—a vicious circle, like the hoop-snake with its tail in its mouth, rolling on to demnition.

The imminence of doom regulates the degree of fear. Tell a man he will lose his job five years from next Wednesday and he will laugh and say, What of it? But tell him his pink ticket comes this Saturday and his fear mounts, visions of terror flustrate him and pictures of the consequences flow through his mind as the acts of his life pass before the drowning man's eyes.

The future is only calculated through the imagination.

And because so few have imagination the future holds no terrors. It is Today that counts. Few folks save money because the rewards come in the dim future, and What, say the imagine-less, Is the future? Not one man in fifty buys insurance or makes a will, because these things are not of Today but of Tomorrow.

Do you fear Tomorrow?

Out with it! *Abas! Oscar spiel!*

What have you to fear? What have I to fear? What has anyone to fear?

Analyze it like this: What can happen to me; what is the blackest thing that can happen? I may die? So be it. It takes more courage to *live* than to die. I do not fear to die. Others have done it successfully—and are perhaps better off for the experiment.

I may be sick? Why *fear* sickness? The fear of sickness brings it on. That some fellow may hit you in the eye? Well, for goodness sake, Terence, a big, two-fisted fellow like you! What's a little pain? A thousand years from now no one will remember that your eye got in the way of a brace of knuckles. Forget it!

I may lose something? What? A job, a client, a customer, a dollar, a friend, an opportunity? There are just as good fish in the sea as ever were caught. Some folks say the best fish haven't been caught *yet*.

Analyze your fear. Set it up on a little pedestal in front of you. Look it over. Then break out into

a good, hearty laugh. Laugh hard, so that you shake all over. Then draw in your brows, set your jaw, grit your teeth, clench your fist, draw back your arm and get ready to knock that little plaster-of-Paris Fear-figure to smithereens.

You'll get a surprise.

When you swing at it, you'll hit only empty space. It won't be there to hit. It will have *vanished!*

Early Days

(*From page 46*)

songs, one of which was entitled, "Alfalfa Hay and Sugar Beets."

Well do I remember how C. B. Smith would sum up in a few short, terse paragraphs, each headed "We Believe," the work of the entire conference so completely that they were unanimously accepted as the consensus of opinion of the entire group as expressed in the daily discussions.

Many who have seen the entire growth of the county agent work have had a pretty good idea of what is supposed to be done, but just what steps the county should take to accomplish it has been the big problem. Growing as rapidly as it has, the county agent work has found it impossible to progress in methods as fast as numbers have increased. Rapid turn-over of agents and addition of new agents has made it necessary to devote so much time to establishing the work that there has been all too little time left for working out better methods of carrying the work on.

Yes, Tedmon, the old days are gone. It was harder work then perhaps, but it was a lot more fun before it got to be such a cut and dried formal proposition that an agent or a specialist knows a year ahead of time just where he is supposed to be and what he is supposed to do and then is expected to deliver 100 per cent, and spend hours and days in reporting on what he has done.

A "Livestock Investigation or Conference" on the farm of Wm. Robbins, Greensburg, Ind. Wm. H. Robbins, Jr. and his dog "Beauty" are on the pony.

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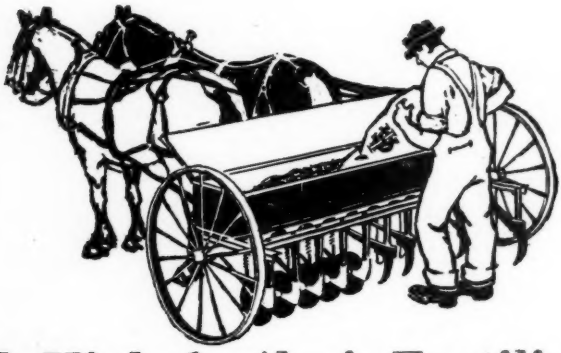

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